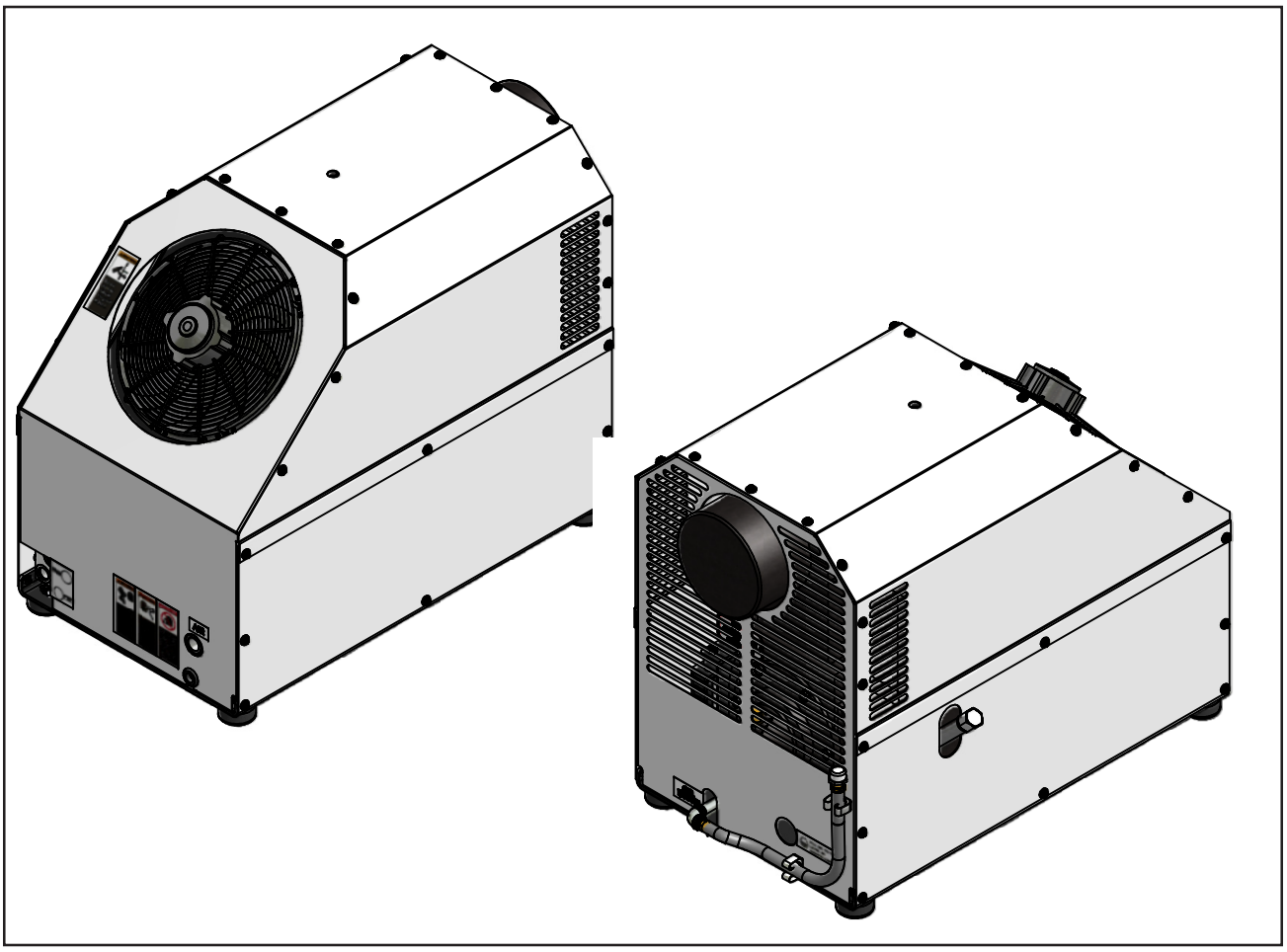
Service and Maintenance User Manual

BOSS BA502 24V PISTON Hydraulic Air Compressor



This manual must be read carefully before using your Boss Industries Air Compressor. Store in a safe and convenient location for future reference.

For technical support:

Phone: (800) 635-6587 (USA)
Phone: (219) 324-7776 (Outside USA)
Fax: (877) 254-4249 (USA)
service@bossair.com (email)
http://www.bossair.com (website)

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Contents

Revision List.....5

Welcome.....6

Safety Information.....7
Warnings, safety rules, and hazards.....7

Specifications.....10

Description of Components.....11

Installation & Operation.....12
Lifting.....12
Mounting the Compressor.....13
Installing the Wiring.....13
Connecting the Hydraulic Hoses.....14
Connecting the Air Hose.....14
Pre-Start-Up Inspection Checks.....14
Operating Procedure.....16

Maintenance.....17
Overview.....17
Recommended Spare Parts List.....17
Maintenance Schedule.....18
Lubrication Recommendation.....19
Compressor Oil 20
Air Intake Filter.....20
Hydraulic Oil Cooler.....21

Troubleshooting.....22
General Tips.....22
Contacting Boss Ind.....23
Where To Find Specific Machine Information.....23

Warranty.....24
Warranty Statement.....25
Summary of Main Warranty Points.....26
Return Goods Instructions.....27
Preparation of Part Return.....27
Filing Procedures.....27
Other Info.....28
Transit Damage.....28

Drawings.....30
Frame System.....32
Motor System.....34
Piston System.....36
Discharge System.....38
Cooler System.....40
Canopy System.....42
Decal System.....44
Wiring Diagram.....46

Revision List

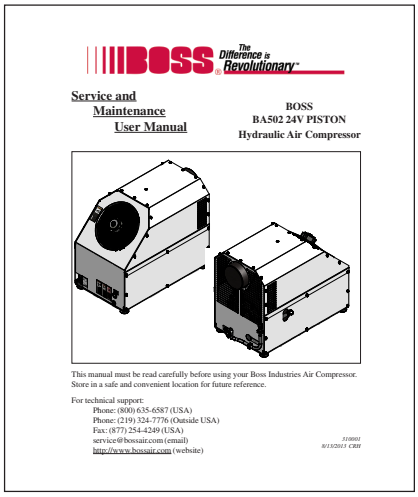
DATE	LOCATION	DESCPRIPTION OF CHANGE	INITIALS

Welcome

General Information

Thank you for choosing the Boss BA502 Hydraulic Air Compressor. Before operating this compressor, read over this manual and become well acquainted with your new machine. Doing this will increase your safety and maximize the life of the machine.

While this manual is written to be as accurate as possible, Boss strives to continually improve the efficiency and performance of its machines. As a result, sometimes there may be slight differences between a given version of the manual and the machine.


BOSS The Difference is Revolutionary™

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BOSS
BA502 24V PISTON
Hydraulic Air Compressor

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310001
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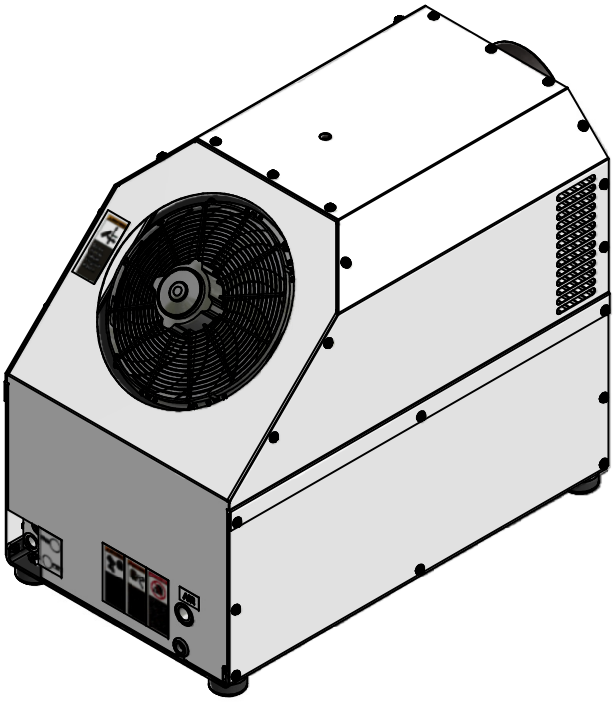
Boss BA502 Hydraulic Air Compressor

The Boss BA502 is a compact, strategically designed system. It integrates all major components on a single frame, which is enclosed in a tough, weather-resistant canopy.



The BA502 Piston design provides output of up to 50 CFM (cubic feet of air per minute) at up to a maximum of 175 PSI (pounds per square inch). High output at relatively low GPM (gallons per minute) translates into the most efficient, quiet, and reliable system in its class, designed to handle virtually any application.

The BA502 Piston also has enhanced safety features offering applications designed to protect your most valuable resource - your operating crew. To prevent overheating, a high temperature switch will shut down the machine in the event of high discharge temperatures.

Safety

IMPORTANT READ BEFORE OPERATING EQUIPMENT

Remember, safety is basically common sense. While there are standard safety rules, each situation has its own peculiarities that cannot always be covered by rules. Therefore with your experience and common sense, you are in a position to ensure your and others safety. Lack of attention to safety can result in: accidents, personal injury, reduction in efficiency and worst of all – Loss of Life. Watch for safety hazards and correct them promptly.

Understanding the proper operation of this equipment is critical to its safe operation. The owner, lessor or operator of this equipment is hereby notified and forewarned that any failure to observe the safety and operating guidelines may result in injury and/or damage. Boss expressly disclaims responsibility or liability for any injury or damage caused by failure to observe these specified precautions or by failure to exercise the ordinary caution and due care required while operating or handling this equipment, even though not expressly specified.

In addition to following these safety guidelines, the operator should follow any company specific guidelines and procedures. Consult your immediate supervisor for specific company safety guidelines and/or procedures.

The following safety symbols are used throughout the manual to draw attention to important information. If the information is not carefully read and the instructions are not followed, severe injury, death, and/or damage to property and equipment may occur.

Indicate[s] an imminently hazardous situation, which, if not avoided, **will** result in death or serious injury.

Indicate[s] a potentially hazardous situation, which, if not avoided, **could** result in death or serious injury.

Indicate[s] a potentially hazardous situation, which, if not avoided, **could** result in minor or moderate injury.

Indicate[s] a potentially unsafe situation or practice, which, if not avoided can result in property and/or equipment damage only.

Safety

The following safety precautions are a general guide to safe operation of the equipment.

⚠WARNING

Read and understand the operations manual and all other safety instructions before using this equipment. Failure to follow operating instructions and/or failure to follow maintenance procedures and intervals could result in personal injury, death, and/or damage to equipment and property.

⚠DANGER

Pressurized System. Do not attempt to remove any compressor parts without first completely relieving entire system of pressure. Do not attempt to service any part of the equipment while in operation. Never attempt to repair or modify any pressure vessel or device.

⚠DANGER

System contains hot oil. The compressor system must be shut off prior to servicing. Open the service valve to ensure complete relief of system air pressure and stored energy. Then permit system to cool down prior to adding compressor oil or servicing the unit.

⚠DANGER

Do not use air from this compressor for breathing or food processing. Air from this compressor will cause severe injury if used for breathing or food processing.

⚠DANGER

The compressor is designed to compress air only. Do not attempt to compress other gases. Compression of other gases may create a situation where an explosion or fire may occur.

⚠DANGER

Do not use flammable solvents for cleaning compressor parts as this can cause the unit to ignite or explode during operation. Keep combustibles out of and away from compressor inlet, and any associated enclosures.

Safety

DANGER Never disable, override, or remove safeties, either temporarily or permanently.

DANGER Connect air hoses only in full compliance with OSHA Standard 29 CFR 1926:302 (b)(7). The required safety devices (velocity fuses) should be tested in accordance with their manufacturer's recommendations to verify that they reduce pressure in case of hose failure and will not nuisance trip with the hose and tool combinations in use. Failure to comply could result in personal injury or death and/or damage to equipment and property.

DANGER Never leave the machine running unattended or leave a tool connected to an air hose when not using. Relieve system of all stored air pressure after use.

WARNING Never adjust the pressure unloader to a setting of greater than 175 PSI. Operating the compressor at greater than 175 PSI may result in personal injury and property damage.

CAUTION Mount the compressor in a stable location capable of supporting 500 lbs. Slight vibration may occur during operation and the machine may move if not securely mounted.

CAUTION When using tools, maintain secure footing at all times. Do not overreach or awkwardly use air tools.

NOTICE Prior to moving vehicle to the next work site, drain the air tank. To prevent the collection of water in the tank drain daily.

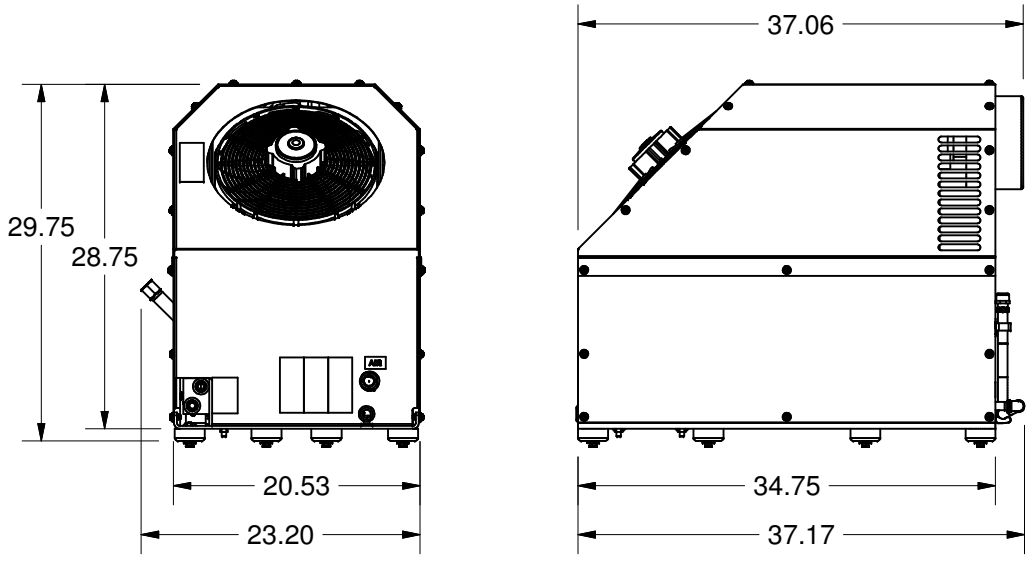
NOTICE Use only Boss approved replacement parts.

Specifications

POWER SOURCE	HYDRAULIC MOTOR	**OPERATING SPEED**	830 RPM MAX.
CYLINDER CONFIG.	2 Stage, 2 Piston	**OIL CAPACITY**	3 QTS
DIMENSIONS	37 1/8"L x 28 3/4"H x 23 1/4"W	**WEIGHT**	590 LBS.
DELIVERY @ 175 PSI	50 CFM	**HYDRAULIC RESERVOIR REQ. ***	25 GALLON MINIMUM
COOLING	AIR	**NORMAL GPM @ 800 RPM**	13 GPM
FAN DIAMETER	13"	**NORMAL OPERATING PSI**	2200 PSI
MAXIMUM PSI	2400 PSI		

* Hydraulic reservoir requirement for compressor only. Additional capacity will be needed to other hydraulic equipment.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT PRIOR NOTICE



– BA502 system is to run intermittently.
– When the BA502 is installed with other hydraulic drive equipment it will require a dedicated flow line.
– If other hydraulics are required, the reservoir size should be at least 25 GAL for the BA502 plus all the other manufacturer's requirements.
– Mounting surface must be capable of 590 lbs. load spread over the four mounting holes.
– Cooling air intake must not see air temperatures above ambient.
– Cooling air discharge must have 10" clearance from any obstructions.
– Ambient running conditions: -20° to 100° F.
– 20° maximum operating slope.

Description of Components

Compressor Assembly - The Boss BA502 hydraulic drive piston compressor assembly is a positive displacement, intermittent-flow, two stage, reciprocating unit. The piston compressor consists of a crankshaft, oil filter, oil pump, two connecting rods, pistons, cylinders, and valve assemblies. As the crankshaft rotates, the pistons move up and down. As the first stage piston move down, a vacuum is created above the piston which allows the reed valve to open and fill the area above the piston with air. When the piston move back up, this air is discharged into a storage tank, mounted on the side. As the second stage piston move down, a vacuum is created above the piston which allows the reed valve to open and fill the area above the piston with air from the first stage storage tank. When the piston move back up, this air is discharged from the compressor. Oil lubricates the bearings and cylinder walls as the crankshaft rotates, ensuring that the system stays cool.

Hydraulic Oil Cooling Systems - The compressor cooling system consists of a hydraulic cooler mounted on the compressor frame. Cool air is drawn through the hydraulic cooler and flows over the compressor surface, exiting out the rear vented panel . Allow for adequate clearance (10") for the air to exit. Also, the package location should not be subjected to air temperatures above ambient.

Fluid Level Sight Glass - This sight glass indicates the fluid level in the crank case. Proper level should be in the middle of the sight glass. Check this level when the compressor is disengaged and the vehicle is parked on level ground. Fluid level should be checked prior to each use.

Electrical System - The Boss compressor's standard electrical system consists of:

-Hydraulic oil cooler fan assembly and relay.
-24VDC N.O. hydraulic solenoid.

⚠CAUTION

Most air tools operating pressure range is between 90 and 125 psi. Operating above the tools' recommended pressures will decrease the life of the tool. Higher operating pressure can also over torque nuts and bolts fatiguing the fastener and mating parts. Strictly adhere to tool operating pressures and torque standards set forth by the tool manufacturer and the specifications of the equipment that work is being performed on.

Installation & Operation

This air compressor should be installed only by those who have been trained and delegated to do so and who have read and understand the manual. Failure to follow the instructions, procedures, and safety precautions in this manual may result in accidents and injuries.

Install, use, and operate this air compressor only in full compliance with all pertinent O.S.H.A., Federal, State, and Local codes or requirements in addition to Boss and any company's regulations.

Do not modify this compressor except with written factory approval.

NOTICE **ALL TRUCKS SHOULD BE ROAD TESTED PRIOR TO STARTING INSTALLATION TO ISOLATE ANY PREVIOUS TRUCK PROBLEMS.**

1. Lifting

Boss Industries Inc. offers a lifting bail for routine lifting, loading onto trucks, etc. Compressors to be air lifted by helicopter must not be supported by the lifting provision, but by slings with appropriate spreader bars. Lift only in full compliance with OSHA standards 29 CFR 1910 subpart N.

Inspect lifting provision for cracked welds and for cracked, bent, corroded or otherwise degraded members prior to lifting.

Make sure entire lifting, rigging and supporting structure has been inspected, is in good condition and had a rated capacity of at least the net weight of the compressor plus and additional 10% allowance for the weight of snow, ice, mud or stored tools and equipment. If you are unsure of the weight, then weigh the compressor before lifting.

Make sure lifting hook has a functional safety latch, or equivalent, and is fully engaged once it has been lifted clear of the ground.

Do not attempt to lift in high winds.

Keep all personnel out from under and away from the compressor when suspended.

Lift compressor slowly and smoothly, without jerking.

Lift compressor no higher than necessary.

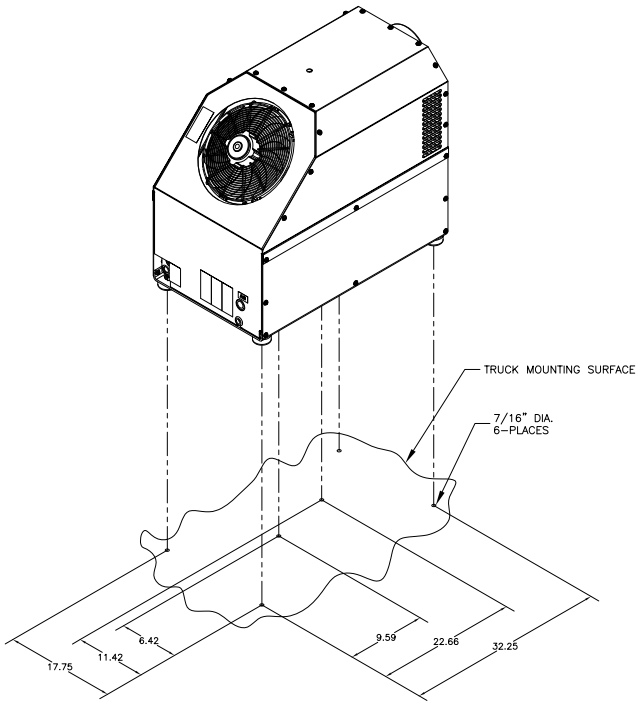
Keep lift operators in constant attendance whenever compressor is suspended.

Set compressor down only on level surfaces capable of supporting at least its net weight plus an additional 10% allowance for the weight of snow, ice, mud or stored tools and equipment.

Installation & Operation

2. Mounting the Compressor

When mounting the compressor care should be taken to ensure that its location does not impede the operation of other components on the vehicle. For example, if your vehicle is equipped with a crane, you must make sure the compressor will not interfere with the swing of the crane. In addition, the compressor should be installed in an area that permits cool ambient air to enter the air filter and the hot air to exhaust without recirculating into the air filter. 10" of exhaust clearance is needed. The compressor air filter is mounted on the frame. Cool ambient air is drawn in from under the frame. One last consideration in the mounting should be the routing of hoses and electrical wires. The frame mounting holes are shown below and the unit should be secured to the vehicle with 3/8 inch grade 8 bolts and washers. Hardware supplied with unit, may not work in all applications. The compressor weighs 500 lbs. Ensure that you have a sub structure to support at least that weight. Be sure to follow all National Vehicle Safety Standards.



3. Installing the Wiring

This unit is shipped from the factory with all necessary internal wiring installed. The only remaining wiring necessary is the wiring needed to interface your vehicle/power source with the Boss compressor. The unit is shipped with a 5 pin connector, they need to be connected as follows:

1. Pin "A" and Pin "E" are to be connected directly to battery positive (Pin "A") and battery negative (Pin "E").
2. Compressor Only: for normal compressor operation, supply 24VDC inputs to Pin "C". This will activate the system and pressurize the tank to 175 PSI. The system will then unload until the tank has dropped to 140 PSI, at which point it will automatically reactivate. The 24VDC output signal from Pin "D" will be present at all times when the motor is running. This can be used to shutdown the hydraulic system.

Installation & Operation

4. Connecting the Hydraulic Hoses

The hydraulic hoses to the compressor should be connected directly to the hydraulic fittings. The pressure "P" input line should be made from a good quality high pressure hydraulic hose 3/4" I.D. rated to handle the hydraulic systems on the vehicle. The return line to tank "T" can be made from a medium pressure (min. 1000 PSI) hydraulic hose 1" I.D. Care should be taken to see that the hoses are not installed with kinks or bends that inhibit flow of the hydraulic oil. Lack of flow could result in damage to the motor and compressor. Lastly check to make sure hoses are not in contact with sharp objects or edges that may fray, chafe or cut them over time. Secure all hoses with tie down straps or clamps.

5. Connecting the Air Hose

The air discharge hose should be connected directly to the "AIR" port. The fitting is a 3/4" female NPT. The air line should be made from a good quality (min. 200 PSI) air hose 3/4" I.D. Care should be taken to see that the hose is not installed with kinks. When adding an air hose, ensure OSHA Regulation 1910.169 is followed.

⚠WARNING

A compressor service valve should be located at the hose reel inlet or the customer's air connection port when a hose reel is not used. Typical plumbing from the machine's air outlet port occurs in the following order:

1. Air tank
2. OSHA valve.
3. Service valve.
4. Moisture trap/gauge/oiler combination (when used).
5. Hose reel (when used).

6. Pre-Start-up Inspection Checks

This inspection should be done prior the compressor test.

I. Check all assemblies, clamps, fittings, hose connections, nuts, and bolts to ensure they are properly tied and secured to the vehicle. This is a very critical area of inspection. The vehicle should not be moved until this inspection has been completed.

II. Remove all tools, rags, and installation equipment from the area.

III. Check compressor oil level and hydraulic fluid level. Check all valves to ensure they are in correct operating position.

6. Pre-Start-up Inspection Checks (Continued)

IV. Apply decals to proper location. Make sure that the area is cleaned prior to applying decals. All decals should have a professional appearance upon application.

V. Vacuum all areas that have metal or plastic shavings. Wipe all fingerprints off unit and vehicle.

VI. Record all serial numbers for this installation.

A. Vehicle V.I.N.

_____

B. Hydraulic Pump Data

_____

C. Compressor Serial Number

_____

D. Boss Serial Number

_____

E. Air Tank Serial Number

_____

F. Note any special applications relating to specific installations.

_____

6. Pre-Start-up Inspection Checks (Continued)

VII. Check all fluid levels (position the unit on a level surface so that proper amount of fluids can be added).

A. Fuel to provide three hours of operation.

B. Hydraulic fluid levels may have to be topped off after test.

C. Compressor.

Check the compressor oil level (see lubricant section of the operator and parts section for type of lubricant to use). 1. Add oil if needed. 2. Additional oil may need to be added after test. 3. Top off oil level to half the sightglass when finished with the test.

D. Any other applicable fluids.

E. Transmission fluid and PTO box.

7. Operating Procedure

I. Read the operation section in the manual carefully before proceeding onto the initial start-up.

II. Start power source and allow for warm-up.

III. Verify the compressor is disengaged.

IV. Engage hydraulic system per company policy.

V. Engage compressor.

8. Shutdown Procedure

I. Disengage compressor circuit.

II. Relieve system of stored air.

Operating Conditions

The following conditions should exist for maximum performance of the compressor. The truck should be as close to level as possible when operating. Operation in ambient temperatures above 100°F (38°C) may experience high temperature shutdown.

Maintenance

This section contains instructions for performing the inspection, lubrication, and maintenance procedures required to maintain the compressor in proper operating condition. The importance of performing the maintenance described herein cannot be over emphasized.

The periodic maintenance procedures to be performed on the equipment covered by this manual are listed on the following page. It should be understood that the intervals between inspections specified are maximum interval. More frequent inspections should be made if the unit is operating in a dusty environment, in high ambient temperature, or in other unusual conditions. A planned program of periodic inspection and maintenance will help avoid premature failure and costly repairs. Daily visual inspections should become a routine.

DANGER

Compressor must be shut down and completely relieved of pressure prior to checking fluid levels. Open service valve to ensure relief of system air pressure. Relieve all stored air pressure energy prior to starting machine. Failure to comply with this warning will cause damage to property and serious bodily harm.

Recommended Spare Parts List

PART NUMBER	DESCRIPTION
80331	KIT, REPAIR REED VALVE
309867	ELEMENT, AIR FILTER
309785	SLEEVE, NEOPRENE COUPLING
302030	KIT, REPAIR HYD MOTOR SEAL
308245	LUBRICANT, 2QT BOX SYNTH

How To Order Parts

For Parts and/or Service Support:

Phone: (800) 635-6587 (USA)
Phone: (219) 324-7776 (Outside USA)
Local Fax: (877) 254-4249
service@bossair.com (email)
http://www.bossair.com (website)

Maintenance

The LUBRICATION AND MAINTENANCE CHART lists serviceable items on this compressor package. The items are listed according to their frequency of maintenance, followed by those items which need only "As Required" maintenance.

Lubrication and Maintenance Chart

SERVICE INTERVAL	MAINTENANCE OPERATION
DAILY	1. Check crankcase oil level. Add if needed. 2. Drain condensation from air receiver.
WEEKLY	1. Inspect the air intake. 2. Check the cylinder head stud torque (see NOTE 2). 3. Check the operation of the receiver safety valves. 4. Inspect lifting frame.
EVERY 3 MONTHS	1. Change the crankcase oil (see NOTE 1). 2. Check cooler fins for dirt and obstruction. Clean if needed.
EVERY 6 MONTHS	1. Inspect the drive coupling for wear. 2. Change the air cleaner.

Use only Boss' synthetic compressor oil. The use of any other oil causes excessive carbon buildup, and may void the warranty on the compressor.

NOTE 1.
Under normal operating conditions, oil changes are required every 3 months. When operating in a dirty environment, change the oil and air filter more frequently as your particular operating conditions dictate. Compressor oil capacity is 3 quarts.

NOTE 2.
Cylinder head stud torque MUST be checked after the initial day of operation. The compressor must be cold (room temperature) before re-torquing of studs. Torque studs to 1,418 in-lbs plus or minus 10 in-lbs.

Maintenance

Lubrication Recommendations

⚠CAUTION **It is important that the compressor oil be of a recommended type and that this oil as well as the air filter element be inspected and replaced as started in this manual.**

The following are general characteristics for a piston lubricant. Due to the impossibility of establishing limits on all physical and chemical properties of lubricants which can affect their performance in the compressor over a broad range of environmental influences, the responsibility for recommending and consistently furnishing a suitable heavy duty lubricant must rest with the individual supplier if they choose not to use the recommended Boss Piston lubricant. The lubricant supplier's recommendation must, therefore, be based upon not only the following general characteristics, but also upon his own knowledge of the suitability of the recommended lubricant in piston air compressors operating in the particular environment involved.

	UNIT	METHOD	RATING
ISO VISCOSITY GRADE		ISO 3448	46
KINEMATIC VISCOSITY		ASTM D445	
- AT 40°C (104°F)	mm2/s		46
- AT 100°C (212°F)	mm2/s		7.7
DENSITY AT 15°C (59°F)	g/mL	ASTM D1298	.843
FLASH POINT (COC)	°C (°F)	ASTM D92	235 (455)
POUR POINT	°C (°F)	ASTM D97	<-45 (-49)
VISCOSITY INDEX (VI)		DIN ISO 2909	135
RUST PREVENTION PROPERTIES		ASTM D665-B	PASS
WATER SEPERABILITY	min	ASTM D1401	10
ROTATING PRESSURE VESSEL OXIDATION TEST	min	ASTM D2272	2200
FZG LOAD CARRYING TEST	FAILURE LOAD STAGE	CEC-L-07-A-95	>12

NOTICE **Mixing different types or brands of lubricants is not recommended due to the possibility of a dilution of the additives or a reaction between additives or different types.**

Maintenance

NOTICE

Due to environmental factors, the useful life of all "extended life" lubricants may be shorter than quoted by the lubricant supplier. Boss encourages the user to closely monitor the lubricant condition and to participate in an oil analysis program with the supplier.

NOTICE

No lubricant, however good and/or expensive, can replace proper maintenance and attention. Select and use it wisely.

Compressor Oil Fill, Level, and Drain

Before adding or changing compressor oil, make sure that the compressor is completely relieved of pressure. Oil is added at the fill cap on the side of the compressor body. A drain line is located opposite the service door. The proper oil level is in the middle of the oil sightglass, when the unit is shut down and has had time to settle. The truck must be level when checking the oil. DO NOT OVERFILL. The oil capacity is given in "Compressor Specifications".

⚠DANGER

Do not attempt to drain condensate, remove the oil level fill cap, or break any connection in the air or oil system without shutting off the compressor and relieve the system of all stored air pressure.

Air Intake Filter (P/N 309867)

The air intake filter is a heavy-duty dry type high efficiency filter designed to protect the compressor from dust and foreign objects.

Frequency of maintenance of the filter depends on dust conditions at the operating site. The filter element must be serviced when clogged. A clogged air filter element will reduce compressor performance and cause premature wear of components.

Maintenance

Hydraulic Oil Cooler

The interior of the oil cooler should be cleaned when the pressure drop across it at full flow exceeds 25 PSI.

1. Remove cooler.
2. Circulate a suitable solvent to dissolve and remove varnish and sludge.
3. Flush generously with hydraulic oil.
4. Once the cooler is reinstalled, fill the hydraulic system with the proper fluid to their appropriate levels.

Troubleshooting

The troubleshooting procedures to be performed on the equipment are listed below. Each symptom of trouble for a component or system is followed by a list of probable causes of the trouble and suggested procedures to be followed to identify the cause.

In general, the procedures listed should be performed in the order in which they are listed, although the order may be varied if the need is indicated by conditions under which the trouble occurred. In any event, the procedures which can be performed in the least amount of time and with the least amount of removal or disassembly of parts, should be performed first.

COMPRESSOR WILL NOT ENGAGE

1. No power supplied to compressor.
2. Internal circuit breaker tripped.
3. Hydraulic system not engaged.

COMPRESSOR ENGAGES BUT WILL NOT PRESSURIZE TANK

1. Air leak in plumbing.
2. Worn piston rings or valve plates.

COMPRESSOR DOES NOT RECOVER PRESSURE AS FAST AS IT SHOULD

1. Dirty filter.
2. Air leak in plumbing.
3. Worn valve plates or piston rings.

Contacting Boss Industries, Inc.

Local Phone: (800) 635-6587
Local Fax: (877) 254-4249
http://www.bossair.com

When calling for technical support, have the following information available:

Machine Serial Number
Description of the problem

Troubleshooting

How To Find Specific Machine Information

The machine serial number can be found on the Boss serial tag located on the base, in the rear of the machine, near the oil sightgalss.

WARRANTY SECTION

Warranty

Boss Industries, Inc. warrants that this Piston Compressor unit conforms to applicable drawings and specifications approved in writing by Boss Industries, Inc.. The unit assembly will be free from defects in material and workmanship for a period of one (1) years from the date of initial operation or eighteen (18) months from the date of shipment, whichever period first expires. All other components and parts of Boss Industries, Inc. manufacture, will be free from defects in material and workmanship for a period of one (1) year from the date of initial operation or eighteen (18) months from the date of shipment, whichever period first expires. If within such period Boss Industries, Inc. receives from the Buyer written notice of and alleged defect in or nonconformance of the unit, all other components and parts of Boss Industries, Inc. manufacture and if in the judgment of Boss Industries, Inc. these items do not conform or are found to be defective in material of workmanship, Boss Industries, Inc. will at its option either, (a) furnish a Service Representative to correct defective workmanship, or (b) upon return of the item F.O.B. Boss Industries, Inc. original shipping point, repair or replace the item or issue credit for the replacement item ordered by Buyer, (Defective material must be returned within thirty (30) days of return shipping instructions from Boss Industries, Inc.. Failure to do so within specified time will result in forfeiture of claim), or (c) refund the full purchase price for the item without interest. Factory installed units will also include warranty on installation for a period of one (1) year. This warranty does not cover damage caused by accident, misuse or negligence. If the compressor unit is disassembled the warranty is void. Boss Industries, Inc. sole responsibility and Buyer's exclusive remedy hereunder is limited to such repair, replacement, or repayment of the purchase price. Parts not of Boss Industries, Inc. manufacture are warranted only to the extent that they are warranted by the original manufacture. Boss Industries, Inc. shall have no responsibility for any cost or expense incurred by Buyer from inability of Boss Industries, Inc. to repair under said warranty when such inability is beyond the control of Boss Industries, Inc. or caused solely by Buyer.

There are no other warranties, express, statutory or implied, including those of merchantability and of fitness of purpose; nor any affirmation of fact or representation which extends beyond the description of the face hereof.

This warranty shall be void and Boss Industries, Inc. shall have no responsibility to repair, replace, or repay the purchase price of defective or damaged parts or components resulting directly or indirectly from the use of repair or replacement parts not of Boss Industries, Inc. manufacture or approved by Boss Industries, Inc. or from Buyer's failure to store, install, maintain, and operate the compressor according to the recommendations contained in the Operating and Parts Manual and good engineering practice. The total responsibility of Boss Industries, Inc. for claims, losses, liabilities or damages, whether in contract or tort, arising out of or related to its products shall not exceed the purchase price. In no event shall Boss Industries, Inc. be liable for any special, indirect, incidental or consequential damages of any charter, including, but not limited to, loss of use of productive facilities or equipment, loss of profits, property damage, expenses incurred in reliance on the performance of Boss Industries, Inc., or lost production, whether suffered by Buyer or any third party.

Boss Industries, Inc.
1761 Genesis Drive
LaPorte, IN 46350

Warranty

Summary of Main Warranty Provisions

As claims, policies and procedure are governed by the terms of the Boss Industries, Inc. warranty, it is necessary to outline some of the more important provisions.

The Boss Industries, Inc. warranty applies only to new and unused products which, after shipment from the factory, have not been altered, changed, repaired or mistreated in any manner whatsoever. Normal maintenance items such as lubricants and filters are not warrantable items.

Parts not of Boss Industries, Inc. manufacture are warranted only to the extent they are warranted by the original manufacturer.

Damage resulting from abuse, neglect, misapplication or overloading of a machine, accessory or part is not covered under warranty.

Deterioration or wear occasioned by chemical and/or abrasive action or excessive heat shall not constitute defects.

Parts replacement and/or correction of defective workmanship will normally be handled by Boss Industries, Inc. or their authorized distributor.

Failure to file a detailed warranty claim/service report for each occurrence of material defect of defective workmanship will cause warranty claim to be rejected.

Defective material must be returned within 30 days of receipt of shipping instructions. Failure to do so within specified time will result in forfeiture of claim.

The distributor is responsible for the initial investigation and write up of the warranty claim.

Distributor shall be allowed no more than 30 days from date of repair to file a warranty claim/service report.

Warranty for failure of Boss Industries, Inc. replacement parts covers the net cost of the part only, not labor and mileage.

The Boss Industries, Inc. warranty does not cover diagnostic calls and travel. That is time spent traveling to the machine to analyze the problem and returning with the proper tools and parts to correct the problem.

Boss Industries, Inc. will deduct from allowable credits for excess freight caused by sender failing to follow return shipping instructions.

Distributors or end-users automatically deducting the value of a warranty claim from outstanding balances due and payable to Boss Industries, Inc. prior to receiving written notification of Boss Industries, Inc. approval of the warranty claim may be subject to forfeiture of the entire claim.

Warranty

Warranty/Return Goods Instructions

The warranty/return procedure outlined below is provided to give the claimant the information necessary to file a warranty/return claim, and enable Boss Industries, Inc. the ability to best serve its' customers.

Please see the following instructions to initiate a return:

Contact Boss Industries, Inc. Returns Department by telephone at 800-635-6587 . You may also send a fax at 877-254-4249.

Warranty Claims - Preparation of Part Return

Parts returned to the factory must be properly packaged to prevent damage during shipment. Damage to a part as a result of improper handling or packing could be cause for denial. When addressing the package for shipment, the following information must be on the outside of, or tagged clearly, to the package.

1. Return Goods Authorization #.
2. Distributor or end-users return address.
3. Correct factory address.
4. Number of packages pertaining to each claim.

NOTE: Our warranty requires that all defective parts be returned to Boss Industries, Inc. freight prepaid. Items sent without RGA number will not be accepted. Unauthorized Returns Will Immediately Be Refused At Dock.

Return or Warranty Claims - Filing Procedures

1. Initiate through a purchase order for warranty part or request for credit.
2. RGA will accompany replacement part.
3. Boss Industries, Inc. will confirm disposition of failed part within 30 days of receipt and or request additional information.
4. Claim denial will result in issuance of a letter of denial.
5. Boss Industries, Inc. will consider each claim on its' own merit and reserves the right to accept or reject claim request.
6. Send Warranty Claim to:
   Boss Industries, Inc.
   1761 Genesis Drive
   LaPorte, IN 46350

Warranty

General

An approved claim depends on the following provision:

1. An RGA # must be issued by Boss Industries, Inc.. (See filing procedures.)
2. Failed part must be returned within 30 days of original invoice date, freight prepaid, with RGA #.
3. Part is determined to be defective.
4. Workmanship is determined to be defective.
5. Machine is within warranty period.
6. Machine has been operated within design conditions.

Claims made through distributors must be verified by distributor prior to contacting Boss Industries, Inc..

Damage in Transit

Do not return damaged merchandise to Boss Industries, Inc., please follow claim procedure.

1. Loss in transit:
   The merchandise in our kit or provided in our factory installations has been thoroughly inspected or carefully installed and tested before leaving our plant. However, regardless of the care taken at the factory, there is a possibility that damage may occur in shipment. For this reason, it is recommended that the unit be carefully inspected for evidence of possible damage or malfunction during the first few hours of operation. Responsibility for the safe delivery of the kit or factory installed unit was assumed by the carrier at the time of shipment. Therefore, claims for loss or damage to the contents of the kit or factory installed unit should be made upon the carrier.

2. Concealed loss or damage:
   Concealed loss or damage means loss or damage, which does not become apparent until the kit is unpacked or the factory-installed unit is run by the end-user. The contents of the kit or factory installed unit may be damaged due to rough handling while in route to its destination, even thought the kit or factory installed unit shows no external damage. When the damage is discovered upon unpacking, make a written request for inspection by the carrier agent within fifteen days of delivery date. Then file a claim with the carrier since such damage is the carrier's responsibility.

   By following these instructions carefully, we guarantee our full support of your claims, to protect you against loss from concealed damage.

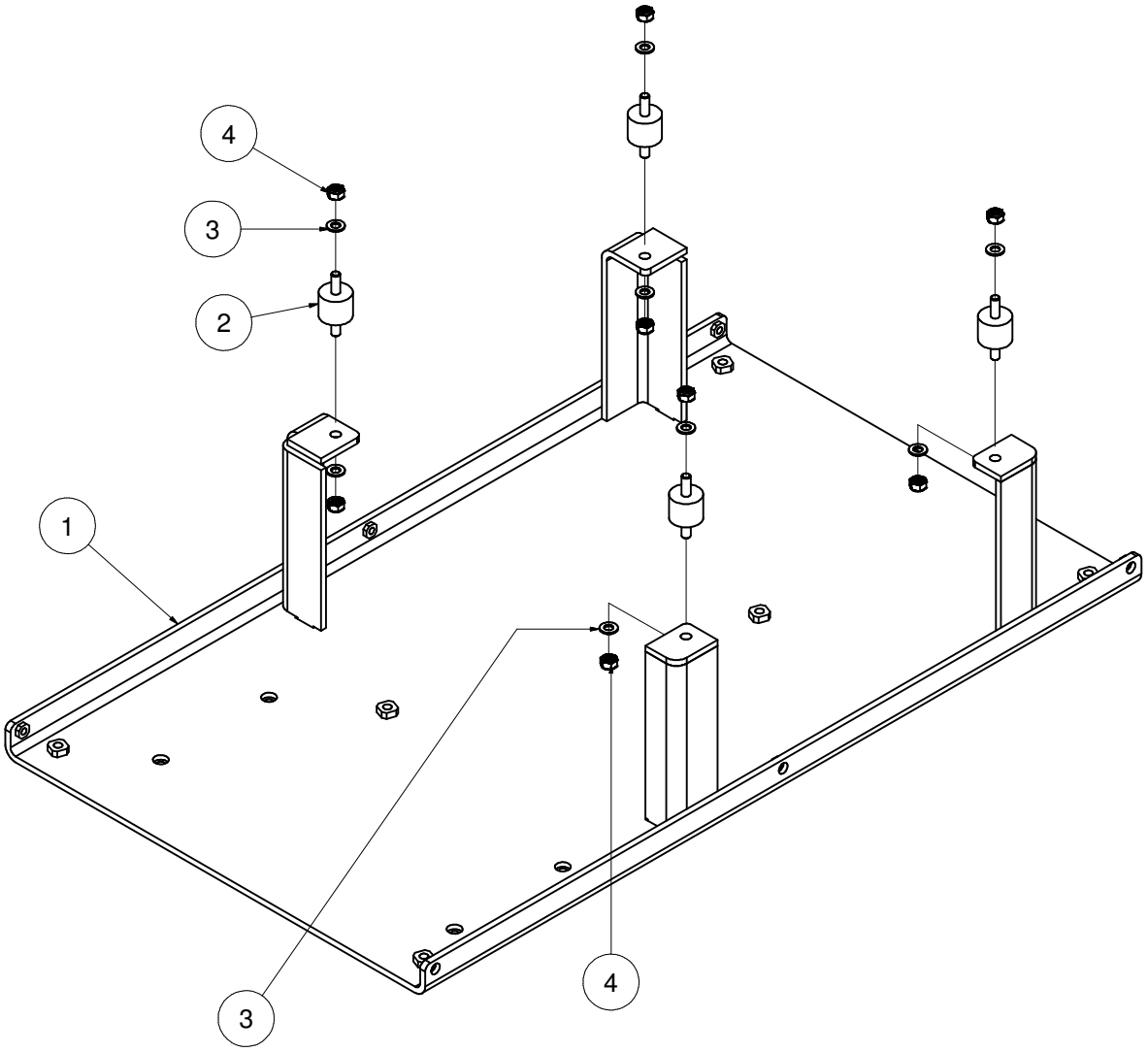
3. Visible Loss or Damage
   Any external evidence of loss or damage must be noted on the Freight Bill or Express Receipt, and signed by the carrier's agent. Failure to adequately describe such external evidence of loss, or damage may result in the carrier refusing to honor a damage claim. The carrier will supply the form required to file such a claim.

PARTS AND ILLUSTRATION SECTION

Frame System

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	309780	BASE
2	4	309781	ISOLATOR
3	8	938908-180	WASHER
4	8	925406-063	NUT

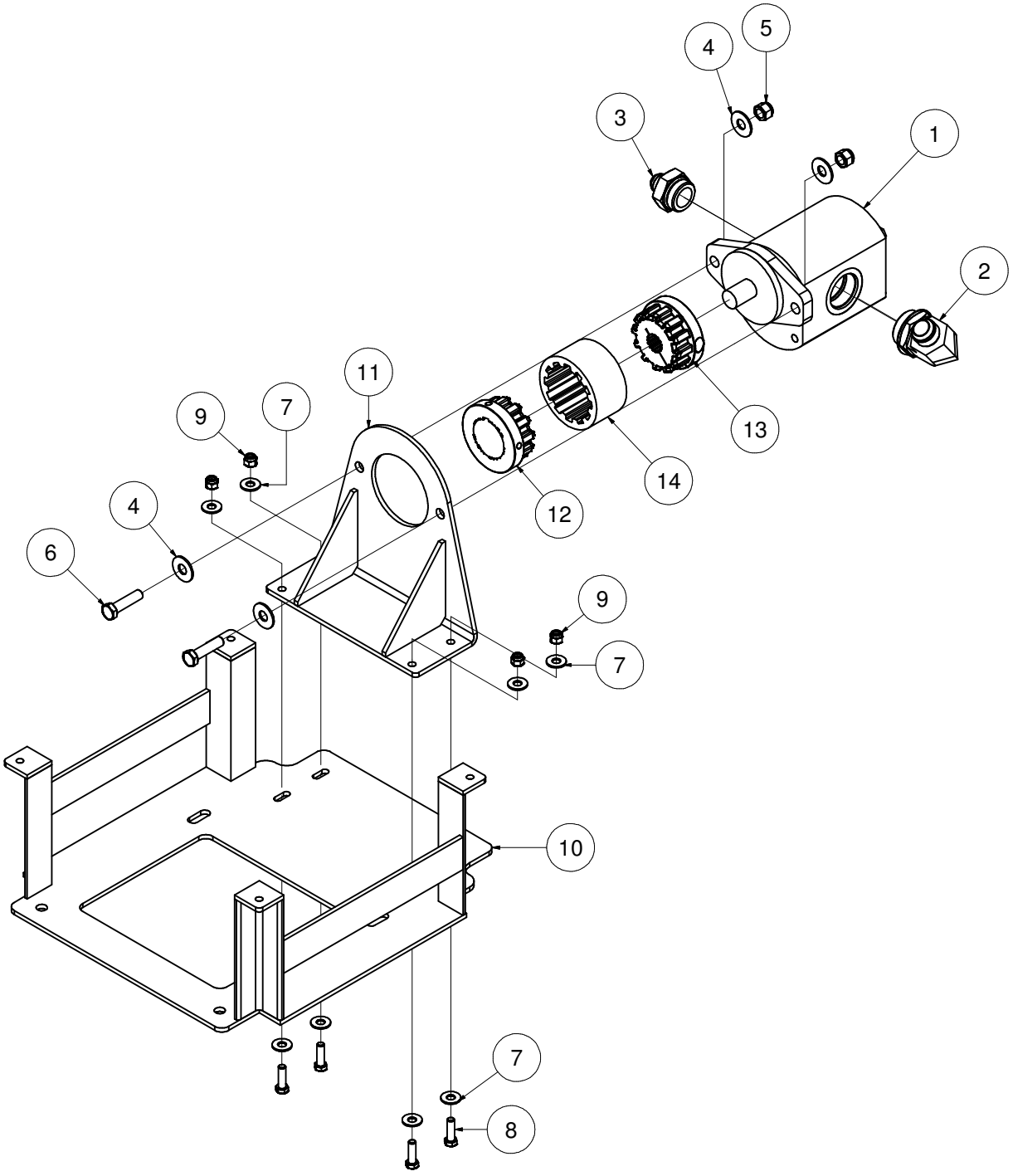
Frame System



Motor System

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	309719	MOTOR
2	1	970416-188	ELBOW
3	1	970512-162	CONNECTOR
4	4	938208-112	WASHER
5	2	925508-262	NUT
6	2	929808-200	BOLT
7	8	938206-071	WASHER
8	4	929806-125	BOLT
9	4	925506-198	NUT
10	1	309782	CRADLE
11	1	309783	BRACKET
12	1	309784	HUB
13	1	306079	HUB
14	1	309785	SLEEVE

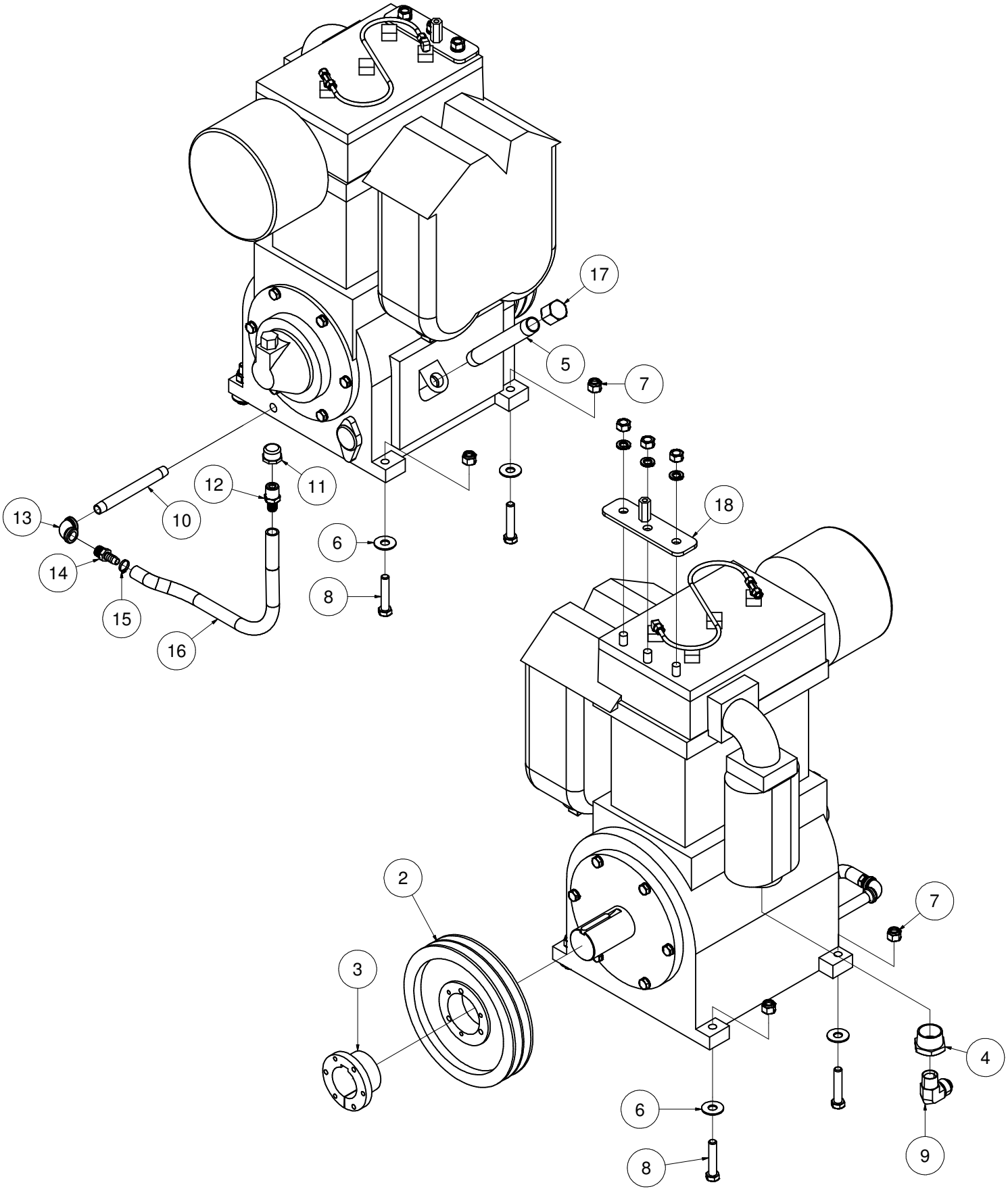
Motor System



Piston System

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	309786	PISTON
2	1	309787	PULLEY
3	1	300747-217	BUSHING
4	1	907605-030	BUSHING
5	1	922112-075	NIPPLE
6	4	938208-112	WASHER
7	4	925508-262	NUT
8	4	929808-250	BOLT
9	1	960212-075	ELBOW
10	1	922106-060	NIPPLE
11	1	307439	CAP
12	1	307440	FITTING
13	1	901515-015	ELBOW
14	1	120-91269	BARB
15	1	300033-075	CLAMP
16	1 1/2 ft	302636	HOSE
17	1	906030-030	CAP
18	1	309904	LIFTBAIL

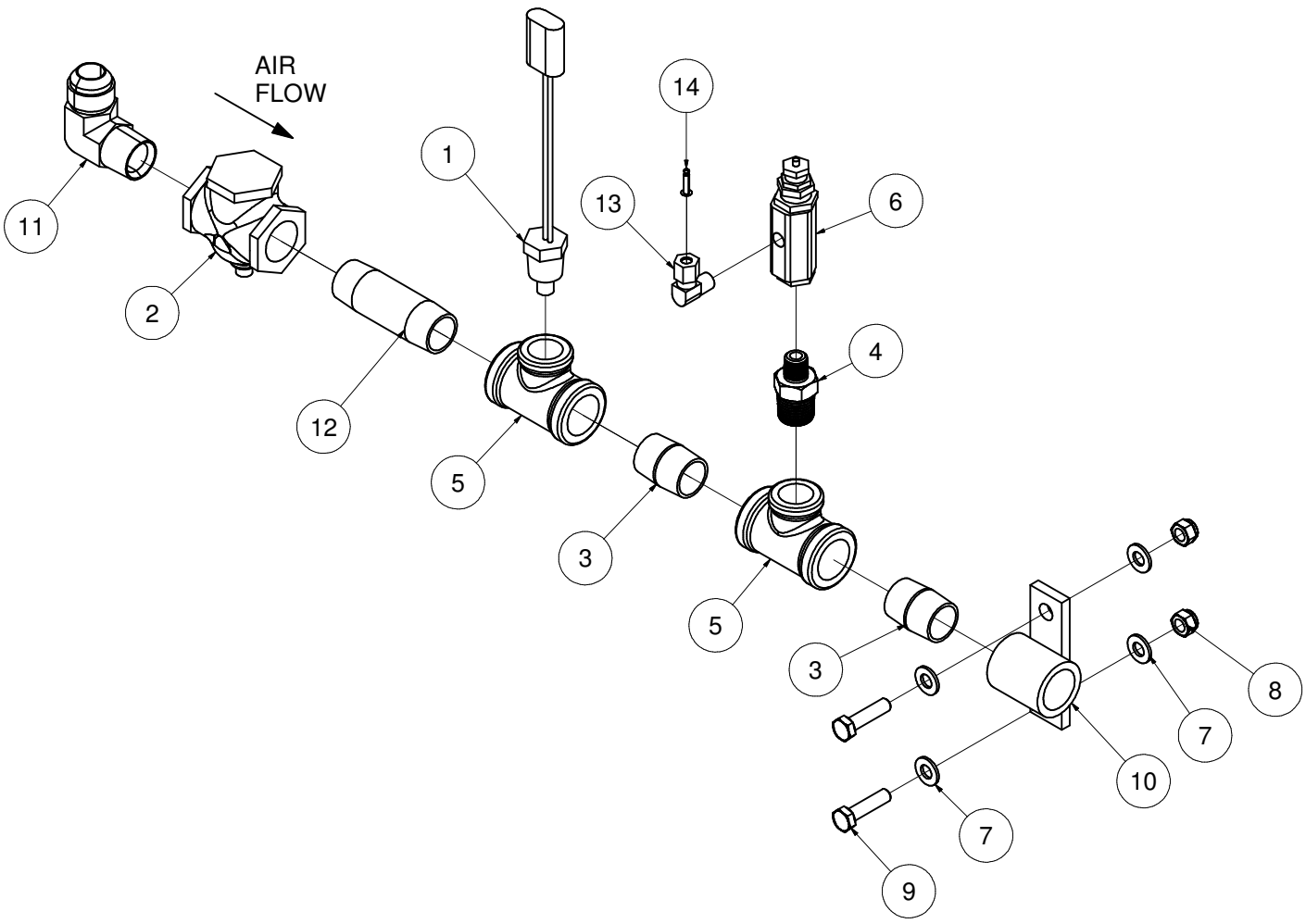
Piston System



Discharge System

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	301578	SWITCH
2	1	301142	VALVE
3	2	922212-000	NIPPLE
4	1	961608-025	NIPPLE
5	2	902203-032	TEE
6	1	309718	VALVE
7	4	938605-071	WASHER
8	2	924305-166	NUT
9	2	929105-125	BOLT
10	1	309789	BRACKET
11	1	960212-075	ELBOW
12	1	922212-030	NIPPLE
13	1	975104-012	ELBOW
14	2	943102-038	RIVET

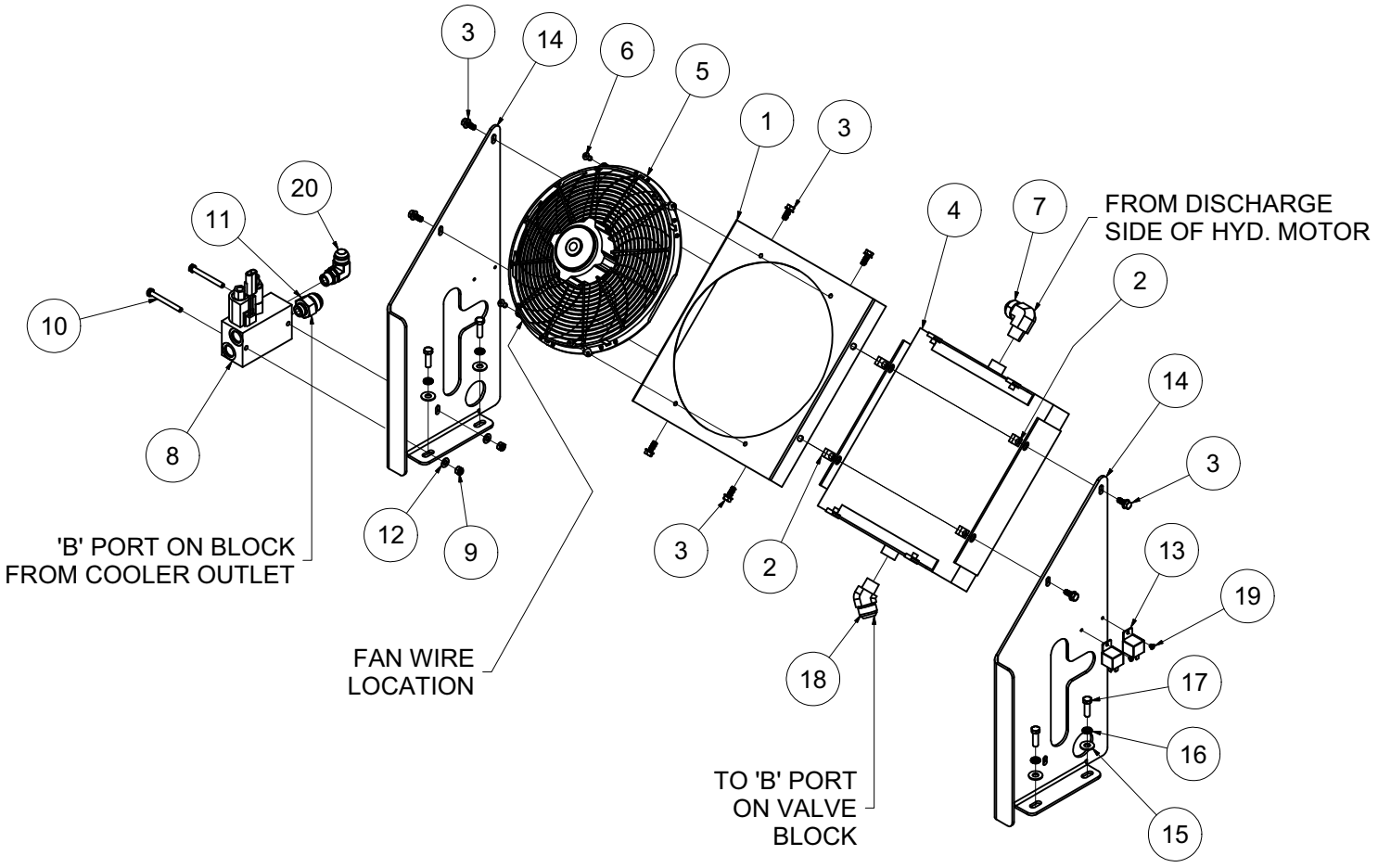
Discharge System



Cooler System

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	301434	SHROUD
2	8	961505-140	NUT
3	8	929705-075	BOLT
4	1	300836	COOLER
5	1	301577	FAN ASSY
6	4	993204-012	RIVET
7	1	960216-075	ELBOW
8	1	80061-12	BLOCK
9	2	924305-166	NUT
10	2	929105-300	BOLT
11	1	970516-088	CONNECTOR
12	2	938605-071	WASHER
13	2	301755-024	RELAY
14	2	309788	BRACKET
15	4	938206-071	WASHER
16	4	937806-094	WASHER
17	4	929806-125	BOLT
18	1	960016-075	ELBOW
19	2	993603-025	RIVET
20	1	970412-088	ELBOW

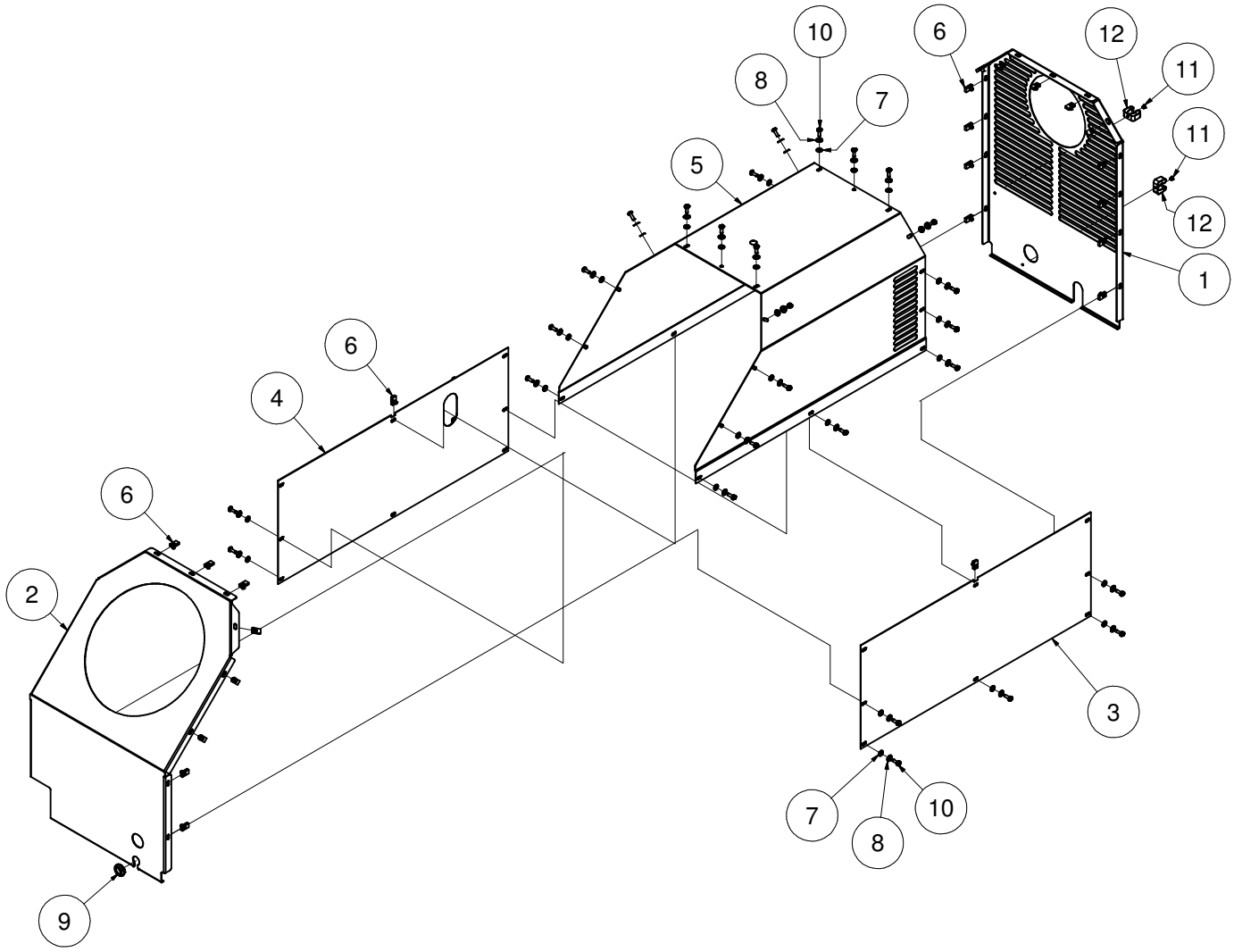
Cooler System



Canopy System

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	309790	PANEL
2	1	309791	PANEL
3	1	309792	PANEL
4	1	309793	PANEL
5	1	309794	HOOD
6	28	961504-090	NUT
7	34	977004-062	WASHER
8	34	984004-071	WASHER
9	1	302011-013	GROMMET
10	34	981504-075	SCREW
11	2	943103-025	RIVET
12	2	302613	CLIP

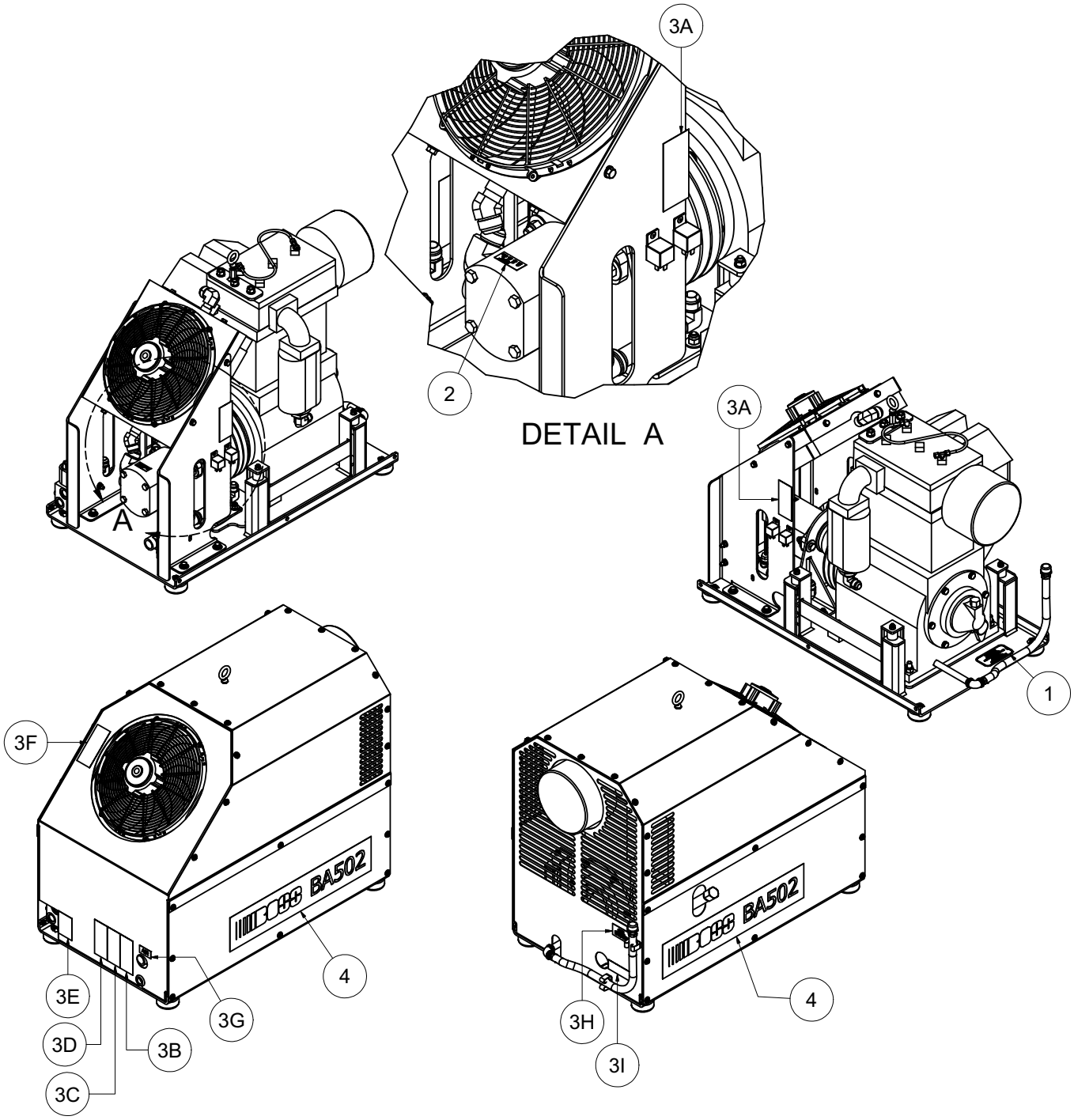
Canopy System



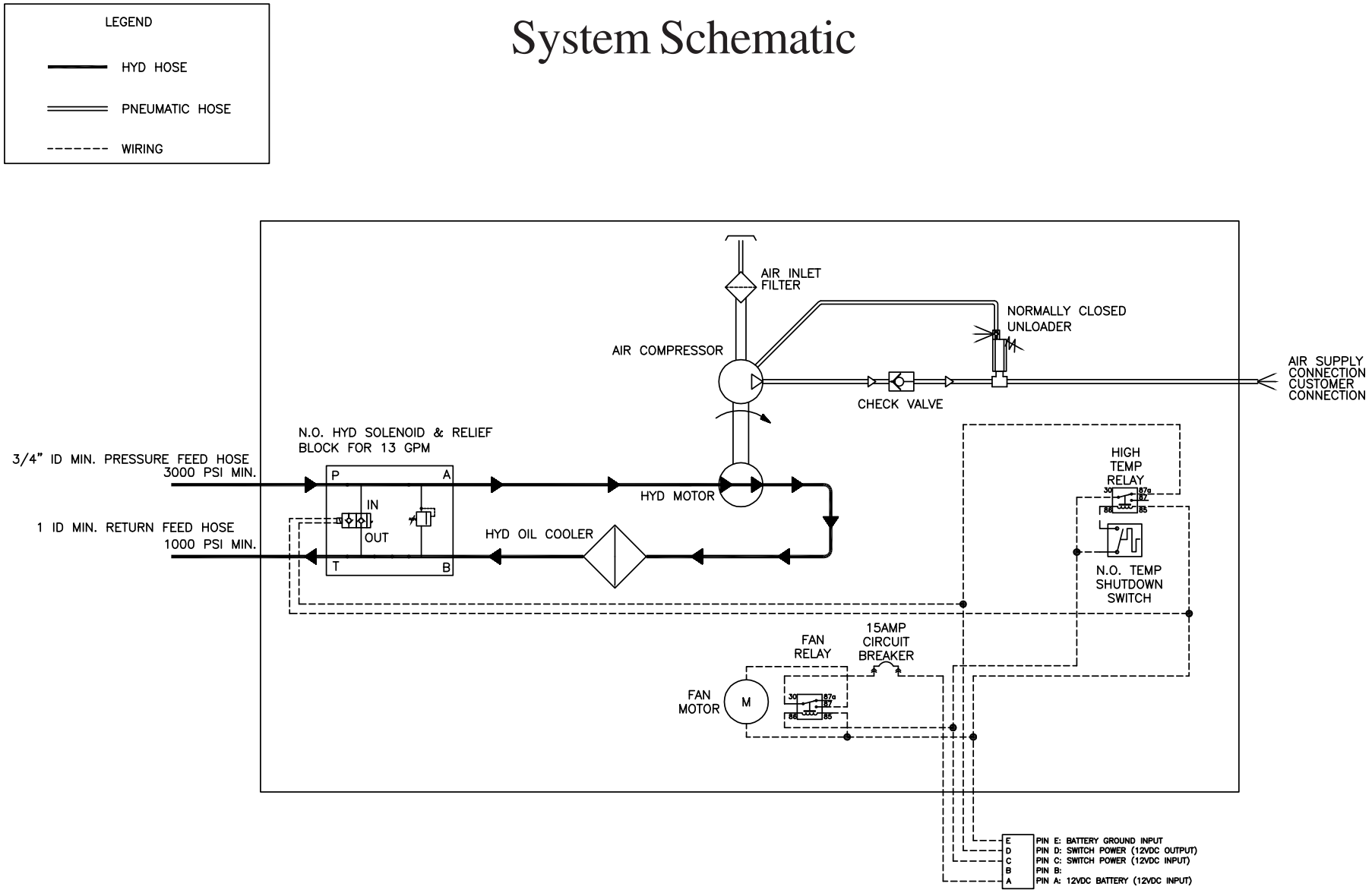
Decal System

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	305761	DECAL, SERIAL TAG BOSS
2	1	301593	DECAL, TEMP. HYD.-140 F30
3	1	308353	DECAL, 36 BHP SHEET
3A	1	308353-01	DECAL, DRIVE COUPLING
3B	1	308353-02	DECAL, DANGER BREATHING
3C	1	308353-03	DECAL, WARNING CONNECT AIR
3D	1	308353-04	DECAL, WARNING READ MANUAL
3E	1	308353-06	DECAL, HYD PRESS & TANK
3F	1	308353-07	DECAL, WARNING FAN GUARD
3G	1	308353-08	DECAL, AIR LEXAN
3H	1	308353-09	DECAL, OIL DRAIN
3I	1	308353-10	DECAL, COMPR SIGHT GLASS

Decal System



System Schematic



OPERATION:

PIN "A" AND PIN "E" ARE TO BE CONNECTED DIRECTLY TO BATTERY POSITIVE (PIN "A") AND BATTERY NEGATIVE (PIN "E").

COMPRESSOR: FOR NORMAL COMPRESSOR OPERATION, SUPPLY 24VDC INPUTS TO PIN "C". THIS WILL ACTIVATE THE SYSTEM AND PRESSURIZE THE TANK TO 175 PSI. THE SYSTEM WILL THEN UNLOAD UNTIL THE TANK HAS DROPPED TO 140 PSI, AT WHICH POINT IT WILL AUTOMATICALLY REACTIVATE. THE 24VDC OUTPUT SIGNAL FROM PIN "D" WILL BE PRESENT AT ALL TIMES WHEN THE MOTOR IS RUNNING. THIS CAN BE USED TO SHUTDOWN THE HYDRAULIC SYSTEM.